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15 **UNITED STATES DISTRICT COURT**  
16 **CENTRAL DISTRICT OF CALIFORNIA**

17 ZAMPERINI AIRFIELD ) Case No. 2:24-cv-04538-CBM-JPR  
18 PRESERVATION SOCIETY, a )  
19 California unincorporated association, ) **DECLARATION OF RAFAEL**  
20 ) **HERRERA IN SUPPORT OF**  
21 ) **RESPONDENT CITY OF**  
22 ) **TORRANCE'S BRIEF IN**  
23 ) **OPPOSITION TO**  
24 ) **PETITIONER'S MOTION FOR**  
25 ) **WRIT OF MANDATE**  
26 )  
27 )  
28 )

v.

CITY OF TORRANCE, a California  
municipal corporation,

Defendants/Respondents.

Hon. Consuelo B. Marshall  
Petition Filed: April 22, 2024

Hearing Date: October 21, 2025  
Time of Hearing: 10:00 a.m.  
Place of Hearing: Department 8D

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Attorneys for Defendant/Respondent,  
City of Torrance

1 I, Rafael Herrera, C.M., MA, CFII, declare as follows:

2 1. I am the Airport Manager for Torrance Municipal Airport, Zamperini  
3 Field, at the City of Torrance (City), and I am over 18 years of age. I submit my  
4 declaration in support of the City's opposition to Petitioner's motion for writ of  
5 mandate in this action. I have personal knowledge of the facts stated below.

6 **Education, Employment, and Experience**

7  
8 2. I graduated from California State University, Los Angeles with a  
9 Bachelor of Science degree in aviation/airway management and operations in 2002.  
10 In 2010, I obtained my Master of Arts (MA) in aviation administration from  
11 California State University, Los Angeles. I am a commercial pilot with instrument  
12 rating, and a certified flight instructor (CFII). I am also a certified member (C.M.) of  
13 the American Association of Airport Executives (AAAE).

14 3. I have been the Airport Manager at Torrance Municipal Airport for over  
15 nine years from March 2016 to the present. From August 2010 through March 2016, I  
16 was the Airport Manager of Compton/Woodley Airport in Compton, California; and  
17 Airport Manager of the San Gabriel Valley Airport in El Monte, California from  
18 August 2005 through August 2010.

19 4. From August 2002 through August 2005, I was the Noise/Operations  
20 Coordinator for the Santa Monica Airport in the City of Santa Monica and a Federal  
21 Aviation Administration (FAA) intern within the FAA's Airport Division.

22 **Torrance Municipal Airport - Zamperini Field**

23 5. The City of Torrance (airport proprietor) is the owner and operator of the  
24 Torrance Municipal Airport. The airport serves as a general aviation (GA) airport  
25 with approximately 543 based aircraft.

26 6. For background, a GA airport is generally a public-use airport that does  
27 not have commercial air carrier service; and its operations include personal, business,  
28

1 and commuter flying; charter flights; flight training; helicopters; and other propeller  
2 driven small airplanes that do not have a stage classification under the FAA noise  
3 regulations. The FAA refers to such aircraft as “nonstage” airplanes.

4 7. Attached hereto as **Exhibit 1** and incorporated herein by reference is a  
5 true and correct copy of excerpts from FAA Order 5190.6B, Airport Compliance  
6 Manual, Sec. 13.4, pages 13-3 through 13-4 (also included in the administrative  
7 record at AR: 7365). The FAA Order provides that, “[t]he vast majority of small  
8 general aviation (GA) aircraft and many propeller-driven commuter aircraft flying in  
9 the United States are nonstage aircraft.” *Id.* at 13-4.

10 8. The airport is located approximately nine miles south of Los Angeles  
11 International Airport. There are three other airports within 6 to 16 miles from the  
12 City – Long Beach Airport, Hawthorne Municipal Airport, and Compton/Woodley  
13 Airport.

14 9. There are six flight schools on the airport. One of them is Sling Pilot  
15 Academy (Sling), the largest of the six onsite flight schools. Sling has a fleet of over  
16 40 small aircraft for training student pilots.

17 **Inapplicability of Airport Noise and Capacity Act**

18  
19 10. Based on my extensive experience with airport matters, I am familiar  
20 with the Airport Noise and Capacity Act (ANCA) and requirements for compliance  
21 with it. My job includes ensuring the airport compliance with all federal regulations,  
22 including ANCA.

23 11. ANCA established a national program for reviewing airport noise and  
24 access restrictions on operations of Stage 2 and Stage 3 aircraft. Thus, the Act does  
25 not apply to restrictions on operations by small, propeller driven nonstage aircraft; it  
26 governs restrictions on stage 2 and 3 aircraft. There are no stage 2 or stage 3 aircraft  
27 based at the Torrance airport, and stage 3 aircraft from outside the airport rarely, if  
28 ever, conduct touch (and stop) and go, low approach, and full stop-taxi back activities

1 at the airport. Types of aircraft that cannot meet the stringent noise standards are  
2 banned at the airport.

3 12. FAA correspondence to Hawaii's Department of Transportation has  
4 made clear that ANCA does not apply to nonstage aircraft, stating that, "ANCA does  
5 not apply to restrictions on operations by propeller driven aircraft weighing 12,500  
6 pounds or less because none of these aircraft are classified as stage 2 or 3, and ANCA  
7 governs restrictions on operations by stage 2 or 3 aircraft."

8 13. Attached hereto as **Exhibit 2** and incorporated herein by reference is a  
9 true and correct copy of the letter from FAA, Assistant Administrator of Airports, to  
10 Hawaii Department of Transportation, dated July 6, 1992.

11 14. In 1990, ANCA required large commercial jet airplanes to comply with  
12 stage 3 noise standards by 1999, leading to the phase-out of the noisiest airplanes  
13 (stage 1 and 2 airplanes). Based on FAA data, the U.S. Government Accountability  
14 Office has estimated that "most U.S. large commercial jet airplanes are certificated at  
15 the minimum required stage 3 noise standards, but nearly all of them are able to meet  
16 more stringent noise standards," and the primary reason is that "many large  
17 commercial airplanes certificated as stage 3 produce lower than stage 3 noise levels  
18 because engine and airframe technology *has outpaced* the implementation of noise  
19 standards."

20 15. Attached hereto as **Exhibit 3** and incorporated herein by reference are  
21 true and correct copies of excerpts from the following publication: U.S. Government  
22 Accountability Office, *Aircraft Noise: Information on a Potential Mandated*  
23 *Transition to Quieter Airplanes*, GAO-2—661, *GAO Highlights*, at 1 (August 2020).

24 16. The end result — the FAA has estimated that the number of people  
25 living near airports in the United States exposed to significant levels of aircraft noise  
26 had decreased from 7 million people in the 1970's to 430,000 in calendar year 2018.  
27  
28

1           17. Attached hereto as **Exhibit 4** and incorporated herein by reference are  
2 true and correct copies of excerpts from the following publication: FAA, *National*  
3 *Plan of Integrated Airport Systems (NPIAS)*, 2021-2025, at 35.

4           18. Nonetheless, as the airport proprietor, the City has authority to restrict  
5 access as a means of reducing aircraft noise concerns in order to improve  
6 compatibility with the local community. The airport, once surrounded primarily by  
7 agricultural and vacant land, now borders densely populated residential communities  
8 to the south, southeast, and southwest of the two-runway GA airport.

9           19. Attached hereto as **Exhibit 5** and incorporated by reference is a true and  
10 correct color aerial photograph depicting the Torrance airport and its vicinity,  
11 including the locations of the City's airport noise monitors within the neighboring  
12 communities.

13 **Ordinance 3930**

14  
15           20. The City's airport operations include a Noise Abatement Office, which  
16 aims to reduce aircraft noise and improve the airport's compatibility with the  
17 surrounding residential community consistent with the FAA regulations and the local  
18 onsite FAA air traffic control tower. As the airport proprietor, the City nonetheless  
19 has the authority to adopt and enforce ordinances that cut down on the frequency and  
20 number of ground-based activities to reduce the noise concerns of the surrounding  
21 community.

22           21. The City's Noise Abatement program has been effective at reducing the  
23 aircraft noise, but the City continues to receive the resident noise concerns from the  
24 non-stage, noisiest aircraft operating at the airport. Ordinance No. 3930 was adopted  
25 as a noise control ordinance in response to resident concerns. The ordinance is  
26 rationally related to legitimate site-specific local noise concerns.

1           22. Since adoption of Ordinance 3930, no Torrance-based flight school has  
2 closed or moved, and Sling continues to operate at the Airport and grow its aircraft  
3 fleet.

4           **Response to Declarations of Mr. Gates and Mr. Arnold**

5           23. I have read the declarations of James Gates and Ivan Arnold submitted  
6 in support of Petitioner's motion for writ of mandate. I researched the airplanes that  
7 Mr. Gates and Mr. Arnold own according to their declarations. Between the two  
8 declarants, they own five aircraft; only two of the aircraft are based in Torrance  
9 airport; four of them are nonstage; and the one that is stage 3 airplane is not based in  
10 Torrance.

11           24. In his declaration, Mr. Gates states that he owns "a Lancair single engine  
12 airplane ... with registration number N320JG." I confirmed that while Mr. Gates'  
13 airplane is based in Torrance, it is nonstage airplane.

14           25. Mr. Arnold testified in his declaration that he owns the following  
15 aircraft:

- 16           • Sling 2 Turbo with registration number N410LP. I confirmed that while this  
17 airplane is based in Torrance, it is nonstage aircraft.
- 18           • Partenavia C.A. S.P.A. AP68TP Series 300 with registration number N98AG.  
19 I confirmed that this aircraft is nonstage and it is not based in Torrance airport.
- 20           • Gulfstream Aerospace Gulfstream IV with registration number N163JW. I  
21 confirmed that this aircraft is nonstage and it is not based in Torrance airport.
- 22           • Saab SF-340A turboprop airplane, with registration number N44KS.  
23 According to Mr. Arnold, this aircraft is stage 3, but I confirmed that it is not  
24 based in Torrance airport.
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1 I declare under penalty of perjury under the laws of the State of California that  
2 the foregoing is true and correct. Executed on August 13, 2025, at Torrance,  
3 California.

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6 Rafael Herrera, C.M., MA, CFII  
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# **EXHIBIT 1**



**U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

National Policy

**ORDER  
5190.6B  
Change 3**

Effective Date:  
September 15, 2023

**SUBJ:** Airport Compliance Manual

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## **1. Purpose**

The Airport Compliance Manual provides guidance to FAA employees on the implementation of the FAA's airport compliance program. Under the program, the FAA has the responsibility to assure airport sponsors comply with certain obligations that arise from FAA grant agreements and from deeds of property conveyance for airport use.

## **2. Distribution**

The Airport Compliance Manual is located on the FAA Office of Airports website where it is available to all interested parties. See:

[https://www.faa.gov/airports/resources/publications/orders/compliance\\_5190\\_6/](https://www.faa.gov/airports/resources/publications/orders/compliance_5190_6/)

## **3. Cancellation**

This Order cancels and replaces the following chapters of the Airport Compliance Manual:

Chapter 16, Resolution of Unlawful Revenue Diversion  
Chapter 17, Self-sustainability  
Chapter 18, Airport Rates and Charges  
Chapter 19, Airport Financial Reports

## **4. Explanation of Changes**

Since 2009, there have been changes to the laws and policies relating to the Federal obligations of airport sponsors and revisions to the procedures for investigating and resolving complaints that allege noncompliance. To incorporate any changes and provide the most useful and current program guidance to FAA employees, the Office of Airport Compliance and Management Analysis is undertaking a review of the Order and will publish updates as the chapter reviews are completed.

The Office of Airport Compliance and Management Analysis issued two previous changes to the Airport Compliance Manual - on December 3, 2021 Change 1 was issued and on December 9, 2022 Change 2 was issued. This Change 3 to the Airport Compliance Manual is issued to address the following:

- After review of public comments offered on the 2009 update, and subsequent experience with using Order 5190.6B as guidance for the airport compliance program, and issuance of Change 1 and Change 2 to the Order, the FAA is now updating Chapters 16, 17, 18 and 19 of the Order.

9/30/2009

5190.6B Change 3

navigable airspace, air traffic control, and air navigation facilities.

The FAA has exercised this authority by promulgating wide-ranging and comprehensive federal regulations on the use of navigable airspace and air traffic control. Similarly, the FAA has exercised its aviation safety authority, including the certification of airmen, aircraft, air carriers, air agencies, and airports under 49 U.S.C. § 44701 *et seq.* by extensive federal regulatory action.

The federal government, through this exercise of its constitutional and statutory powers, has preempted the areas of airspace use and management, air traffic control and aviation safety. Under the legal doctrine of federal preemption, which flows from the Supremacy Clause of the Constitution, state and local authorities do not generally have legal power to act in an area that already is subject to comprehensive federal regulation.

Because of the increasing public concern about aircraft noise that accompanied the introduction of turbojet powered aircraft in the 1960s and the constraints such concern posed for the continuing development of civil aeronautics and the air transportation system of the United States, the federal government in 1968 sought, and Congress granted, broad authority to regulate aircraft for the purpose of noise abatement.

This authority, codified at 49 U.S.C. § 44715, constitutes the basic authority for federal regulation of aircraft noise.

#### **13.4. CFR Part 36, Noise Standards for Aircraft Type and Airworthiness Certification.**

Under 49 U.S.C. § 44715, the FAA may propose rules considered necessary to abate aircraft noise and sonic boom. Aircraft noise rules must be consistent with the highest degree of safety in air commerce and air transportation, economically reasonable, technologically practicable, and appropriate for the particular type of aircraft. On November 18, 1969, the FAA promulgated the first aircraft noise regulations, which were codified in 14 CFR Part 36. The new Part 36 became effective on December 1, 1969. It prescribed noise standards for the type certification of subsonic transport category airplanes and for subsonic turbojet powered airplanes regardless of category. Part 36 initially applied only to new types of aircraft. As soon as the technology had been demonstrated, the standard was to be extended to all newly manufactured aircraft of already certificated types.

In 1973, the FAA amended Part 36 to extend the applicability of the noise standards to newly produced airplanes irrespective of type certification date. In 1977, the FAA amended Part 36 to provide for three stages of aircraft noise levels (Stage 1, Stage 2, and Stage 3), each with specified limits. This regulation required applicants for new type certificates applied for on or after November 5, 1975, to comply with Stage 3 noise limits, which were stricter than the noise limits then being applied. Airplanes in operation at the time that did not meet the Stage 3 noise limits were designated either as Stage 2 or Stage 1 airplanes.

In 1976, the FAA amended the aircraft operating rules in 14 CFR Part 91 to phase out operations in the United States, by January 1, 1985, of Stage 1 aircraft weighing more than 75,000 pounds. These aircraft were defined as civil subsonic aircraft that did not meet Stage 2 or Stage 3 Part 36 noise standards. Effectively, the Stage 1 category is composed of transport category and jet airplanes that cannot meet the noise levels required for Stage 2 or Stage 3 under Part 36, Appendix B. It also includes aircraft that were never required to demonstrate compliance with

9/30/2009

5190.6B Change 3

Part 36 because they were certificated prior to the requirement for Part 36 noise certification. Stage 1 aircraft include some corporate jets, some transport category turbo-prop, and some transport category piston airplanes. Aircraft certificated under [Part 36](#) Subpart F, *Propeller Driven Small Airplanes and Propeller-Driven, Commuter Category Airplanes*, do not have a stage classification, and as such are referred to as nonstage. The vast majority of small general aviation (GA) aircraft and many propeller-driven commuter aircraft flying in the United States are nonstage aircraft. In addition, some aircraft to which Part 36 does not apply, regardless of method of propulsion, can be aircraft certificated in the experimental category. For example, most jet war birds, military aircraft types and World War II aircraft are also classified as nonstage aircraft.

As a result of congressional findings, ANCA revised CFR Part 91 to include the provision that no civil subsonic turbo aircraft weighing more than 75,000 pounds may be operated within the 48 contiguous states after January 1, 2000, unless it was shown to comply with the Stage 3 noise standards of CFR Part 36.

In July 2005, the FAA adopted more stringent Stage 4 standards for certification of aircraft, effective January 1, 2006. Any aircraft that meets Stage 4 standards will meet Stage 3 standards. Accordingly, policies for review of noise restrictions affecting Stage 3 aircraft may be applied to Stage 4 aircraft as well.

**13.5. The Aircraft Noise Compatibility Planning Program.** In 1979, Congress enacted the Aviation Safety and Noise Abatement Act (ASNA). In ASNA, Congress directed the FAA to: (1) establish a single system of noise measurement to be uniformly applied in measuring noise at airports and in surrounding areas for which there is a highly reliable relationship between projected noise and surveyed reactions of people to noise; (2) establish a single system for determining the exposure of individuals to noise from airport operations; and (3) identify land uses that are normally compatible with various exposures of individuals to noise. (See [Table 1 of Part 150](#) at the end of this chapter.) FAA promulgated 14 CFR Part 150 to implement ASNA. Part 150 established the “day-night average sound level” (DNL) as the noise metric for determining the exposure of individuals to aircraft noise. It identifies residential land uses as being normally compatible with noise levels below DNL 65 decibels (dB). ASNA also provided for federal funding and other incentives for airport operators to prepare noise exposure maps voluntarily and institute noise compatibility programs. Under ASNA, noise compatibility programs “shall state the measures the [airport] operator has taken or proposes to take to reduce existing noncompatible uses and prevent introducing additional noncompatible uses in the area covered by the [noise exposure] map.”

Consistent with ASNA, Part 150 requires airport operators preparing noise compatibility programs to analyze the following alternative measures:

- (1). Acquisition of land in fee, and interests therein, including but not limited to air rights, easements, and development rights;
- (2). Construction of barriers and acoustical shielding, including the soundproofing of public buildings;

## **EXHIBIT 2**



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Jul 6, 1992

Mr. Rex D. Johnson  
Director  
Hawaii Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813-5097

Dear Mr. Johnson:

This is in response to your March 13 letter to Mr. Jeffrey Shane and his reply to you of April 3 in which he indicated that the Federal Aviation Administration (FAA) would review the questions you raised regarding the State's ability to maintain the existing limitations on West Maui Airport if the airport is purchased by the state. We have reviewed the limitations in light of existing law, particularly the Airport Noise and Capacity Act of 1990, 49 U.S.C. App. sec. 2151 et. seg., (ANCA) and airport grant compliance requirements under the Airport and Airway Improvement Act, as amended (Airport Act).

Regarding applicability of ANCA, only two of the existing restrictions that the state proposes to maintain at West Maui are contained in 1986 zoning ordinance No. 1535: (1) the noise level limit on operations by propeller-driven aircraft of 12,500 pounds or less and (2) the EPNdB limits for takeoff, sideline, and approach noise.

ANCA does not apply to restrictions on operations by propeller driven aircraft weighing 12,500 pounds or less because none of these aircraft are classified as stage 2 or 3, and ANCA governs restrictions on operations by stage 2 and 3 aircraft.

The previously-adopted EPNdB limits need not undergo the process established under the Airport Noise and capacity Act. The factors relevant to our determination on West Maui include:

(1) the airport is currently privately-owned and private use, (2) the restriction was adopted well before the transfer of ownership and does not appear to have been put into effect with the intent of circumventing ANCA, and (3), in these circumstances, the transfer of ownership will make the airport available for public use for the first time. A major purpose of ANCA is to prevent the proliferation of uncoordinated and inconsistent restrictions on aviation that could impede the national air transportation system. The relaxation of existing restrictions and improvement of the availability of airports for public use is consistent with

this purpose. In these circumstances, it would not serve the purpose of ANCA to interpret ANCA to apply because the transfer, even with the existing restriction in place, represents an overall improvement in airport access. We do not here address the applicability of ANCA to use restrictions under other circumstances.

If these same factors can be demonstrated regarding the remaining restrictions, ANCA also would not apply to them. FAA requires evidence that they have been implemented and we welcome any additional information that you may be able to provide. We have also contacted the airport manager for further documentation.

We also wish to point out that, if the state proposes to implement new restrictions or to tighten existing ones, it will be required to comply with ANCA and 14 CFR Part 161.

As to the Federal grant assurances, they are not applicable to West Maui provided that no Federal funds are used to purchase or improve the airport. However, if the state applies for Federal grant funds in the future for use at West Maui Airport, then it must comply with the applicable grant assurances. Any ban on helicopter or jet operations would appear to violate Federal grant agreement Assurance No. 22, that the airport operator "will make its airport available as an airport for public use on fair and reasonable terms and without unjust discrimination, to all types, kinds, and classes of aeronautical uses." (Also see section 511 (a) (1) of the Airport and Airway Improvement Act, as amended). The state may use airport-generated revenues from other state-owned airports for capital improvements and maintenance expenses at West Maui Airport without violating the revenue use limitation under the Federal grant assurances (see section 511 (a) (12) of the Airport and Airway Improvement Act, as amended). The revenue use limitation permits use of airport-generated revenues for capital and operating costs of the local airport system.

This letter pertains solely to the Department of Transportation/FAA interests in the airport's compliance with ANCA and the Federal grant assurances. It is intended only as a response to your concerns about compliance with those requirements.

I hope that this addresses your basic questions. We will provide you with further FAA decisions on ANCA applicability as soon as we have received and reviewed documentation implementing the restrictions.

Sincerely,

Leonard L. Griggs,  
Assistant Administrator for Airports

## **EXHIBIT 3**

# GAO Highlights

Highlights of [GAO-20-661](#), a report to congressional committees

View [GAO-20-661](#). For more information, contact Heather Krause at (202) 512-2834 or [krauseh@gao.gov](mailto:krauseh@gao.gov).

## Why GAO Did This Study

Although advances in technology have led to quieter aircraft capable of meeting increasingly stringent noise standards, airport noise remains a concern. FAA regulates aircraft noise by ensuring compliance with relevant noise standards. In 1990, federal law required large jet airplanes to comply with stage 3 noise standards by 1999, leading to a phase-out of the noisiest airplanes (stage 1 and 2 airplanes). Later, federal law required smaller airplanes to comply with stage 3 standards by 2016.

The FAA Reauthorization Act of 2018 included a provision for GAO to review a potential phase-out of stage 3 airplanes—the loudest aircraft currently operating in the United States. This report describes (1) the proportion of stage 3 airplanes in the U.S. fleet, and what proportion of these stage 3 airplanes are able to meet more stringent noise standards and (2) selected stakeholders' views on the potential benefits, costs, and challenges of phasing out stage 3 airplanes.

GAO reviewed FAA's analysis of December 2017 fleet data, analyzed January 2020 fleet data from select airlines and airframe and engine manufacturers, and interviewed FAA officials. GAO also interviewed a non-generalizable sample of 35 stakeholders, including airlines; airframe and engine manufacturers; airports; and industry associations, selected based on fleet and noise data, stakeholder recommendations, or prior GAO knowledge.

August 2020

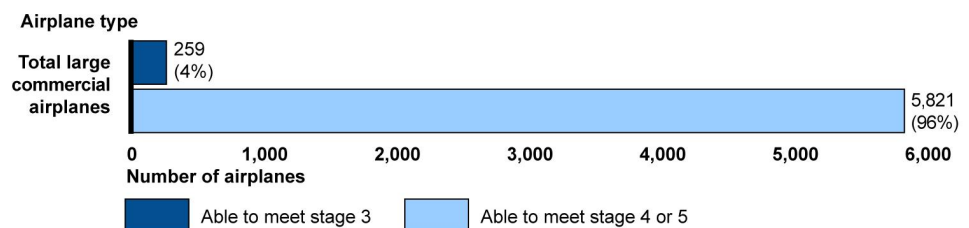
## AIRCRAFT NOISE

### Information on a Potential Mandated Transition to Quieter Airplanes

#### What GAO Found

Based on Federal Aviation Administration (FAA) data and GAO estimates, most U.S. large commercial jet airplanes are certificated at the minimum required stage 3 noise standards, but nearly all of them are able to meet more stringent noise standards. Sixty-three percent of large commercial airplanes in the United States are certificated as meeting the stage 3 standards; however, 87 percent of them were manufactured with technologies that are able to meet more recent and stringent stage 4 or 5 standards as currently configured, according to FAA's 2017 analysis. By analyzing updated data from airlines and aviation manufacturers, GAO estimated that this proportion is even higher: 96 percent of large commercial airplanes are able to meet stage 4 or 5 standards (see figure). According to FAA officials and aviation stakeholders, the primary reason many large commercial airplanes certificated as stage 3 produce lower than stage 3 noise levels is because engine and airframe technology has outpaced the implementation of noise standards. More recently, some airlines have accelerated retirement of certain airplanes, some of which are certificated as stage 3, due to the decrease in travel amid the COVID-19 pandemic. For the generally smaller regional commercial jets (i.e., generally with less than 90 seats), 86 percent are able to meet stage 4 or stage 5 standards, according to manufacturers' data. With regard to general aviation (which are used for personal or corporate flights), 73 percent of the jet airplanes in that fleet are able to meet the more stringent stage 4 or 5 standards, according to manufacturers' data.

#### GAO Estimate of The Number of Large Airplanes in the U.S. Commercial Fleet That Are Able to Meet Stage 3 or Stage 4 and 5 Noise Standards, January 2020



Source: GAO assessment of December 2017 Federal Aviation Administration (FAA) noise-based fleet composition analysis and January 2020 aviation stakeholder data. | GAO-20-661

#### Data table for GAO Estimate of The Number of Large Airplanes in the U.S. Commercial Fleet That Are Able to Meet Stage 3 or Stage 4 and 5 Noise Standards, January 2020

Airplane type	Number able to meet stage 3	Percentage able to meet stage 3	Number able to meet stage 4 and 5	Percentage able to meet stage 4 and 5
Large commercial airplanes	259	4	5821	96

According to stakeholders GAO interviewed, a phase-out of jet airplanes that are certificated as meeting stage 3 standards would provide limited noise reduction and limited other benefits, and could be costly and present other challenges. A phase-out could require recertificating the vast majority of stage 3 airplanes to comply with stage 4 or 5 standards. This process could be costly for operators and manufacturers but would provide little reduction in noise. Further, airplanes currently unable to meet more stringent standards would require modifications or

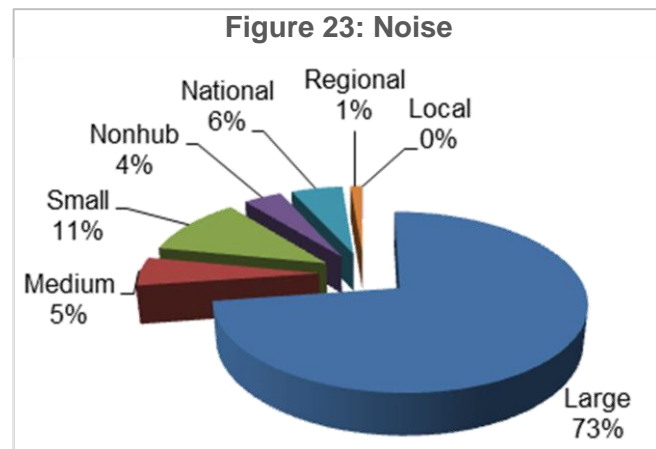
face retirement. For older airplanes that could not be recertificated to meet stage 4 or 5 standards, some operators could incur costs for replacement airplanes sooner than originally planned. Although stakeholders indicated that a phase-out would not substantially reduce noise, they identified other limited benefits newer airplanes generate, such as reduced greenhouse gas emissions and fuel consumption.

## **EXHIBIT 4**



## Noise

The noise situation around airports has changed dramatically since 1976.<sup>34</sup> At that time, an estimated seven million people living near airports in the United States were exposed to significant levels of aircraft noise.<sup>35</sup> That number decreased markedly over time, despite significant increases in both passenger demand and flight operations. This reduction of aircraft noise levels for people living near or around airports who are exposed to aircraft noise is primarily due to reductions in aircraft source noise and the phaseout of older Stage 1 and 2 aircraft. The FAA estimates that the number of people in the United States living in areas adjacent to airports with noise levels above the DNL of 65 dB decreased from approximately 498,000 in CY 2005 to 430,000 in CY 2018.



Considerable effort has been expended over the past 45 years to provide relief to noise-impacted areas in part by funding noise mitigation projects under the AIP. Noise mitigation projects include residential and public building sound insulation, land acquisition, and relocating residents from noise-impacted areas. Noise compatibility efforts also promote preventive measures, such as comprehensive planning, zoning, subdivision ordinances, building codes, and real estate disclosure. In addition, airports have acquired noise barriers to reduce ground run-up noise.

Development in this category includes projects to meet the expectations of residents of the surrounding area for a quiet and clean environment. It also includes projects to mitigate noise for residences or public buildings, noise monitoring systems, and compensation to property owners for overflights. This development supplements the noise reductions that have been achieved by quieter aircraft and the use of noise abatement flight procedures. This category accounts for almost 1.4 percent (\$614 million) of NPIAS costs with 73 percent of the costs at large hub airports. Costs are concentrated at airports with frequent flights by jet aircraft and include the relocation of households and sound insulation of residences and public buildings in noise impacted areas underlying aircraft approach and departure paths. This development is part of an extensive Federal and industry program involving land use planning, quieter aircraft, and noise abatement procedures that have reduced the estimated number of people exposed to significant noise.

<sup>34</sup> In 1976, the DOT published its Aviation Noise Abatement Policy, which provided a course of action for reducing aviation noise impact. The principles contained in that document and subsequent legislative and regulatory action have resulted in a dramatic reduction in the number of Americans adversely exposed to aviation noise. An excerpt of that policy is available online at:

[https://www.faa.gov/about/office\\_org/headquarters\\_offices/apl/noise\\_emissions/planning\\_toolkit/](https://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/planning_toolkit/).

<sup>35</sup> Defined as day/night average sound level (DNL) of 65 decibels (Db) or higher in title 14 CFR part 150, § 150.7, and appendix A (table 1) for residential land uses.

## **EXHIBIT 5**



  
Michelle G. Ramirez  
Community Development Department

## TORRANCE AIRPORT NOISE MONITORS

Lines and photos are approximate, not to be used for establishing absolute or relative positions

T:\Mia\Request\2008\serial\8111\Airport Noise Monitors

VFR ONLY

